VISES
PUMPS

THE FULTON MACHINE & VIS
LOWVILLE, N.Y. U.

DR. D
NO. 11
DATE X

URPLESS, DUNN &
Direct Sales Representatives
74-76 Murray Stree
NEW YORK
34 North Cl
CHIC

"F. & R." "STAR"

PUMPS

BELT, MOTOR AND ENGINE DRIVEN CENTRIFUGAL PUMPS

DEER RIVER PLOWS
CORE PUNCHES
PULP STONE TRUING LATHES

Catalogue H

This Catalogue supersedes all former issues

Destroy old Catalogue

Fulton Machine & Vise Co.

Lowville, N. Y., U. S. A.

CABLE ADDRESS: FULMCO WESTERN UNION CODE

SURPLESS, DUNN & CO.,

Direct Sales Representatives

74-76 Murray Street
NEW YORK

34 North Clinton Street
CHICAGO

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Introductory

WITH an unbroken record for superiority of product since incorporation, we offer this catalogue with the assurance that the present high standard of our goods will be maintained and that our service will continue to be more prompt and efficient, due to our improved methods of manufacturing and increased facilities.

Guaranty

We expressly agree to repair or replace, free of charge, any of our goods we sell which shall at any time be found to have been defective in workmanship or material. We are able to give this unqualified guaranty, and cheerfully do so, solely because we have perfected our product through many years' experience, because we put into them only the best materials to be had, and because our employees have become experts in their line of work and are held to the strictest accountability for the proper execution of their individual share in the making of our goods.

To the Trade

All previous price lists and trade circulars are superseded by this catalogue.

Quotations are subject to change without notice, but we will do our utmost to advise the trade of such changes.

All orders accepted and all agreements or contracts are contingent upon strikes, fires, accidents or causes beyond our control.

Goods delivered to carriers in good order, and so receipted for, releases us from further responsibility.

Defective goods will be replaced or credited at invoice price.

Claims for shortage or deductions must be made within 10 days of receipt of goods.

Goods cannot be returned unless by special arrangement and then subject to discount and expense.

Special order work is not subject to cancellation after once under way.

VISES

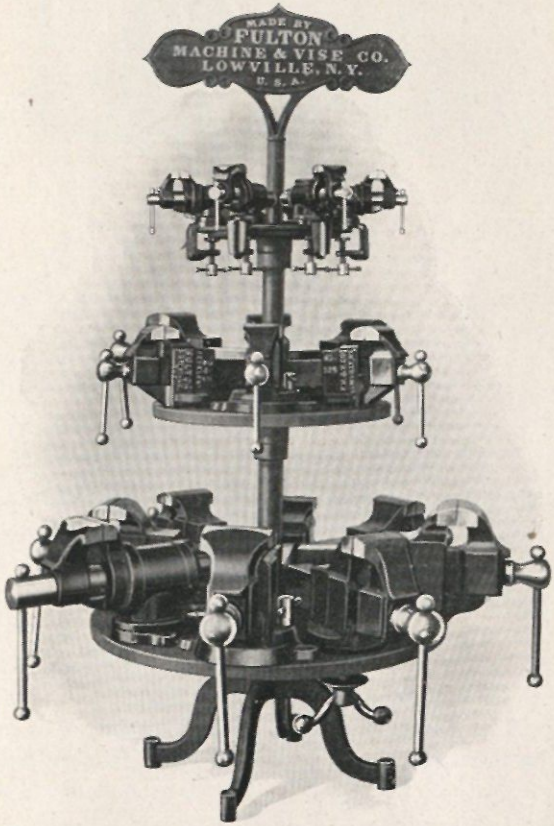
IN the manufacture of vises we aim to produce nothing but a high class article, combining strength and finish. **All our vises have welded cast steel faced jaws.** We can furnish vises with removable steel face upon special order, but we do not recommend them.

Several brands of vises are on the market with renewable or removable cast steel face which is claimed to be a favorable feature of the vise. Such vises do not and cannot possess the strength of a vise REINFORCED with cast steel properly welded to the casting.

To insert a removable steel the casting must be cut away and whether fastened with screws or pins gives no added strength to the vise.

We also call attention to the fact that the face of a good vise jaw DOES NOT WEAR OUT or need renewing and should the corrugations wear smooth and the jaws fail to grip the work before the life of the vise is gone (which our experience has not proven to be the case) the same can be recut for practically the same expense as the cost of a new set of removable steels.

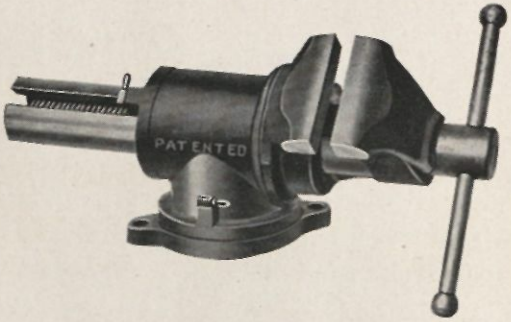
Vises with smooth ground instead of corrugated jaw facings can be furnished with very slight delay and without extra expense.



Vise Display Stand

Furnished to Dealers at Cost

Stand is shipped knocked down, in a neat package and is easily assembled and set up. Weight, crated, 175 pounds. Height of stand, sixty inches. Extreme diameter with vises, forty-four inches.



F. and R.

Machinist's Pattern

Cast Steel Faced Jaws, Tempered

This vise has the advantage of two complete swivels, a combination of the two giving the most desirable position for the use of a mechanic.

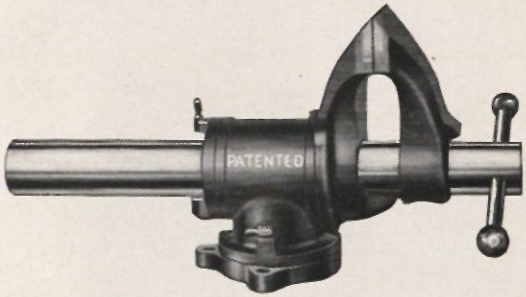
The vise is locked at any angle by two separate methods. One by clamping the work within the jaws which tightens the frictions and the other by the use of the position pins. With both in use the vise is POSITIVELY locked in any position. **The jaws of the F. & R. vise are always held in place when work is removed by the position pins,** if the operator requires, by the use of which the vise is made **stationary** at any angle.

PRICE LIST

Always use numbers when ordering

No.	*2	Jaws 2	in.	Opens 2	in.	Wgt.	6½	lbs.	Price	$16.00
No.	3	Jaws 3½	in.	Opens 5	in.	Wgt.	37	lbs.	Price	27.00
No.	4	Jaws 4	in.	Opens 5⅜	in.	Wgt.	56	lbs.	Price	32.00
No.	5	Jaws 4½	in.	Opens 6½	in.	Wgt.	70	lbs.	Price	39.00
No.	6	Jaws 5	in.	Opens 7	in.	Wgt.	89	lbs.	Price	49.00
No.	7	Jaws 6	in.	Opens 9	in.	Wgt.	155	lbs.	Price	70.00

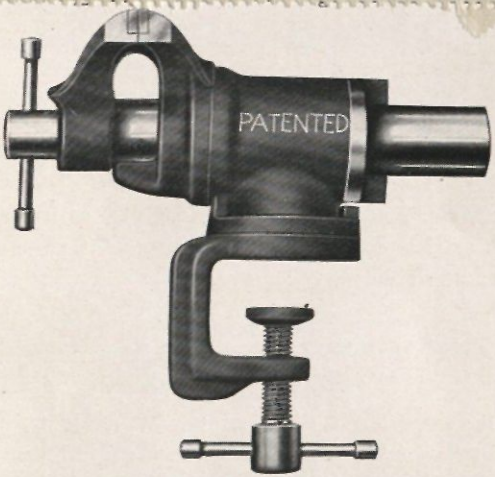
*Note—No. 2 vises have no pins or position stops.



F. and R.

Coachmaker's Pattern

No. 8 Jaws 4½ in. Opens 9 in. Wgt. 64 lbs. Price $44.00



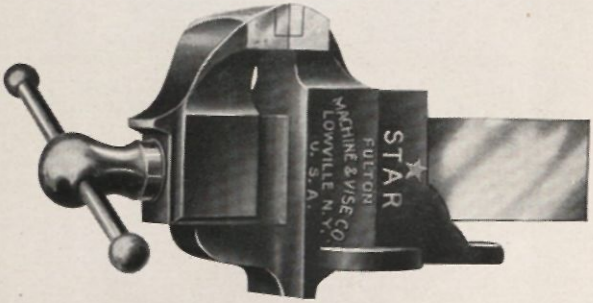
F. and R.

Auto and Motor Boat Vise

Width of Jaws 2 in. Opens 2 in. Wgt. 7½ lbs.

PRICE LIST

Jaws and Finished Parts, Plain	$17.00
Jaws and Finished Parts, Nickeled	20.00



"Star" Machinist's Vise

(Registered in U. S. Patent Office)

Stationary Base—Stationary Jaw

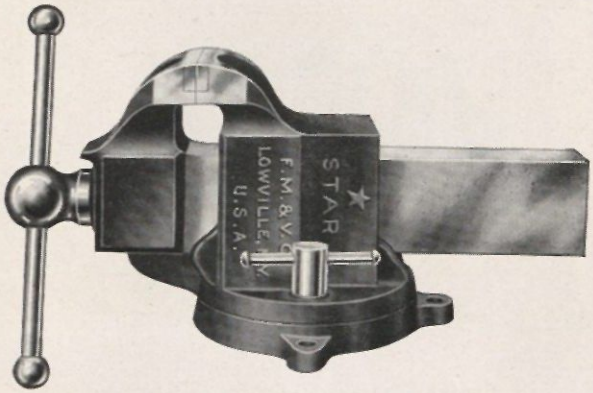
Jaws—Cast Steel Faced and Tempered

Our "Star" brand is our heaviest pattern, strongest vise and combines the most desirable features of the several types of regular bench vises.

PRICE LIST—Solid Base

Always order by number

No.	825	Jaws	2½	in.	Opens	3½	in.	Wgt.	17	lbs.	Price $ 9.00
No.	8½	Jaws	3	in.	Opens	4	in.	Wgt.	20	lbs.	Price 10.00
No.	9	Jaws	3½	in.	Opens	5½	in.	Wgt.	28	lbs.	Price 11.25
No.	10	Jaws	4	in.	Opens	6	in.	Wgt.	42	lbs.	Price 12.75
No.	11	Jaws	4½	in.	Opens	7	in.	Wgt.	54	lbs.	Price 15.50
No.	12	Jaws	5	in.	Opens	8	in.	Wgt.	72	lbs.	Price 20.00
No.	12½	Jaws	5½	in.	Opens	9	in.	Wgt.	108	lbs.	Price 30.00
No.	13	Jaws	6	in.	Opens	10	in.	Wgt.	125	lbs.	Price 39.00
No.	13½	Jaws	7	in.	Opens	12	in.	Wgt.	200	lbs.	Price 55.00



"Star" Machinist's Vise

Registered in U. S. Patent Office

Swivel Base—Stationary Jaw

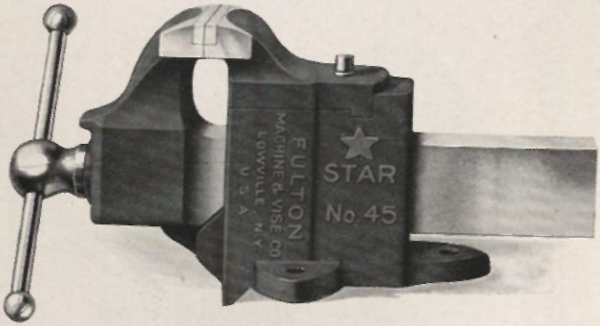
Jaws—Cast Steel Faced and Tempered

This vise can be swiveled and the base is locked by a taper head bolt, which locks it as firmly as the jaws are locked.

These vises cannot wobble or chatter when in use, as the bolt takes up all lost motion.

PRICE LIST—Swivel Base

No.	1825	Jaws	2½	in.	Opens	3½	in.	Wgt. 20 lbs.	Price	$12.00
No.	18½	Jaws	3	in.	Opens	4	in.	Wgt. 28 lbs.	Price	13.00
No.	19	Jaws	3½	in.	Opens	5½	in.	Wgt. 36 lbs.	Price	15.00
No.	20	Jaws	4	in.	Opens	6	in.	Wgt. 50 lbs.	Price	17.00
No.	21	Jaws	4½	in.	Opens	7	in.	Wgt. 64 lbs.	Price	20.00
No.	22	Jaws	5	in.	Opens	8	in.	Wgt. 82 lbs.	Price	30.00
No.	22½	Jaws	5½	in.	Opens	9	in.	Wgt. 120 lbs.	Price	38.00
No.	23	Jaws	6	in.	Opens	10	in.	Wgt. 153 lbs.	Price	52.00
No.	23½	Jaws	7	in.	Opens	12	in.	Wgt. 220 lbs.	Price	70.00



"Star" Machinist's Vise

(Registered in U. S. Patent Office)

Stationary Base—Swivel Back Jaw

Jaws—Cast Steel Faced and Tempered

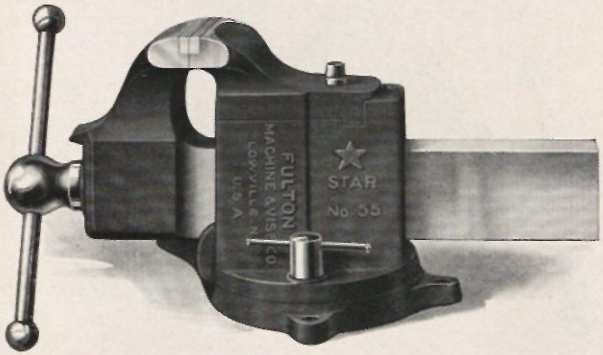
The design of the Swivel Jaw Vises was developed in the same manner as the design for the Stationary Jaw Vises and they are just as strong.

By removing the pin from the back jaw it will swivel so that the jaws will grip firmly any taper or irregular shaped piece.

These vises will stand up under the roughest shop usage, or will take care of the finest tool room work equally well.

PRICE LIST

No. 42	Jaws 3 in.	Opens 3½ in.	Wgt. 23 lbs.	Price	$15.00
No. 43	Jaws 3½ in.	Opens 4¾ in.	Wgt. 28 lbs.	Price	16.00
No. 44	Jaws 4 in.	Opens 5¼ in.	Wgt. 41 lbs.	Price	19.00
No. 45	Jaws 4½ in.	Opens 6 in.	Wgt. 54 lbs.	Price	22.00
No. 46	Jaws 5 in.	Opens 7½ in.	Wgt. 78 lbs.	Price	28.00
No. 47	Jaws 5½ in.	Opens 8 in.	Wgt. 96 lbs.	Price	35.00
No. 48	Jaws 6 in.	Opens 9 in.	Wgt. 146 lbs.	Price	50.00



"Star" Machinist's Vise

(Registered in U. S. Patent Office)

Swivel Base—Swivel Back Jaw

Jaws—Cast Steel Faced and Tempered

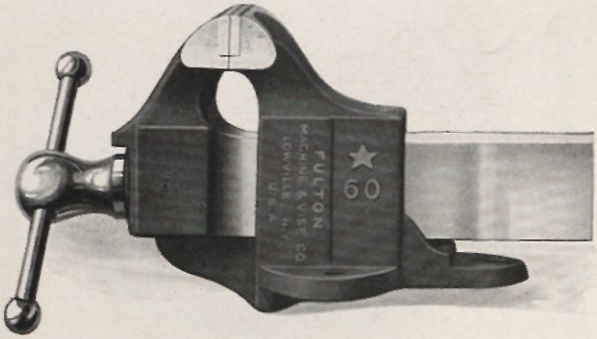
One of the reasons which has prevented the Swivel Jaw type of vise from being more generally used has been its liability to breakage.

After a long period of experimental work we designed, and now make, one which is free from this objection.

Because the right mechanical principles were followed in its design, the rear jaw swivels more easily than any other and without any binding.

PRICE LIST

No. 52	Jaws 3 in.	Opens 3½ in.	Wgt. 28 lbs.	Price $17.50
No. 53	Jaws 3½ in.	Opens 4¾ in.	Wgt. 32 lbs.	Price 20.00
No. 54	Jaws 4 in.	Opens 5¼ in.	Wgt. 46 lbs.	Price 24.00
No. 55	Jaws 4½ in.	Opens 6 in.	Wgt. 65 lbs.	Price 28.00
No. 56	Jaws 5 in.	Opens 7½ in.	Wgt. 97 lbs.	Price 35.00
No. 57	Jaws 5½ in.	Opens 8 in.	Wgt. 109 lbs.	Price 44.00
No. 58	Jaws 6 in.	Opens 9 in.	Wgt. 168 lbs.	Price 60.00

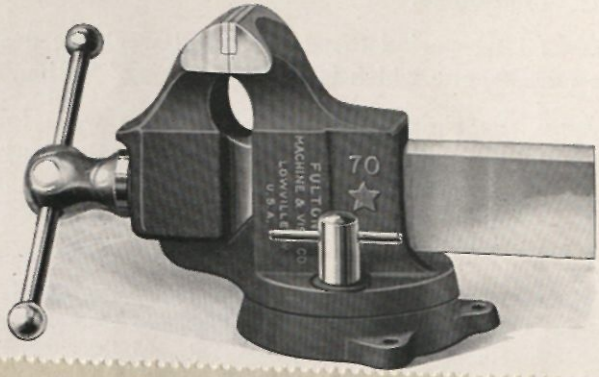


"Star" Filer's Vise

(Registered in U. S. Patent Office)

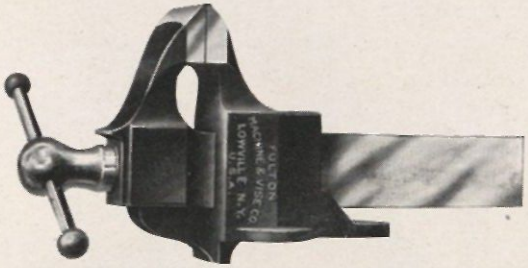
Jaws—Cast Steel Faced and Tempered

No. 60 Jaws 4 in. Opens 5½ in. Wgt. 44 lbs. Price.....$14.50



Swivel Base—Stationary Jaw

No. 70 Jaws 4 in. Opens 5½ in. Wgt. 51 lbs. Price.....$18.00



"Star"

(Registered In U. S. Patent Office)

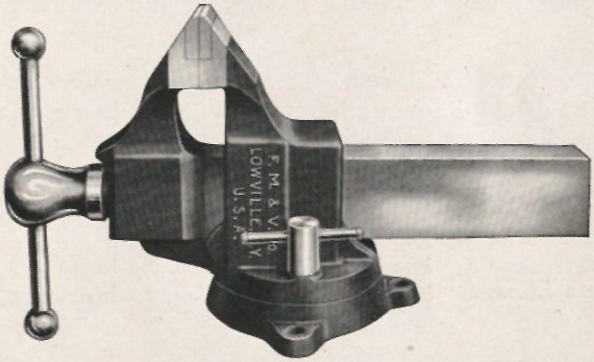
Coachmaker's Vises

Stationary Base—Stationary Jaw

Jaws Cast Steel Faced and Tempered

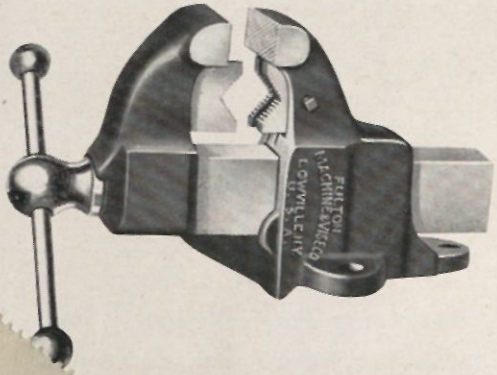
PRICE LIST

No. 14 Jaws 4¼ in. Opens 9 in. Wgt. 48 lbs. Price.....$15.00



Swivel Base—Stationary Jaw

No. 18 Jaws 4¼ in. Opens 9 in. Wgt. 58 lbs. Price....$20.00



"Star"

(Registered in U. S. Patent Office)

DISCONTINUED

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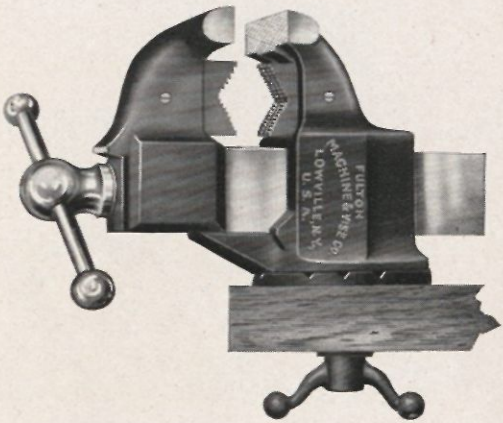
Stationary B[illegible] Machinist's and Pipe Vise

This is a new addi[illegible]nd is the result of an apparent demand for a st[illegible] as a swivel, base combination vise.

No. C15	Jaws 3⅝ in.	Wgt. 50 lbs.	[illegible]		$16.00
No. C16	Jaws 4¼ in.	Wgt. 70 lbs.	Cap.		[illegible].00
No. C17	Jaws 5 in.	Wgt. 120 lbs.	Cap. 0		32.00
No. C18	Jaws 6 in.	Wgt. 175 lbs..	Cap. 0-6		45.00



"Star"

(Registered in U. S. Patent Office)

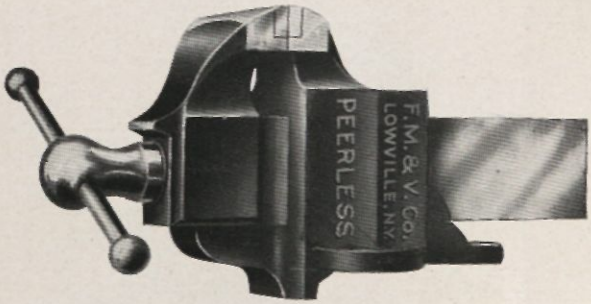
Swivel Base Combination Machinist's and Pipe Vise

This vise has ample weight and strength and is fitted with removable pipe jaws. These jaws are made of a special grade of steel and will give maximum service.

These vises are same high standard in every way as our other styles.

PRICE LIST

No. 150	Jaws	3⅝	in.	Wgt.	50	lbs.	Cap.	0-2	in.	Price **$16.00**
No. 160	Jaws	4¼	in.	Wgt.	72	lbs.	Cap.	0-3	in.	Price **22.00**
No. 170	Jaws	5	in.	Wgt.	125	lbs.	Cap.	0-4	in.	Price **32.00**
No. 180	Jaws	6	in.	Wgt.	180	lbs.	Cap.	0-6	in.	Price **45.00**



"Peerless"

onary Base—Stationary Jaw

Steel Faced and Tempered

The Best Money in America, Barring None

DISCONTINUED

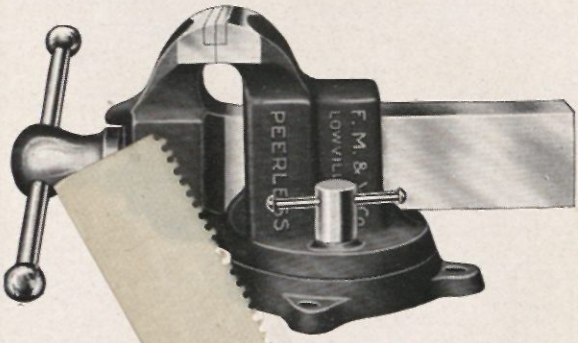
16

The consumer ge ine vise for his money in the Peerless line than ise now on the market. **We say this without fea iction.** Same quality and finish as our other lines eight.

Peerless cannot be matched- le vise, at an exceptionally low price.

PRICE LIST—Solid Base

No. 245	Jaws 3	in.	Opens 3½	in.	Wgt. 17	lbs.	Price	$	5.25
No. 25	Jaws 3½	in.	Opens 4	in.	Wgt. 22	lbs.	Price		6.00
No. 26	Jaws 4	in.	Opens 5½	in.	Wgt. 28	lbs.	Price		7.00
No. 27	Jaws 4½	in.	Opens 6	in.	Wgt. 42	lbs.	Price		8.50
No. 28	Jaws 5	in.	Opens 7	in.	Wgt. 52	lbs.	Price		10.00
No. 29	Jaws 5½	in.	Opens 8	in.	Wgt. 73	lbs.	Price		13.00



rless"

Swivel ... tionary Jaw

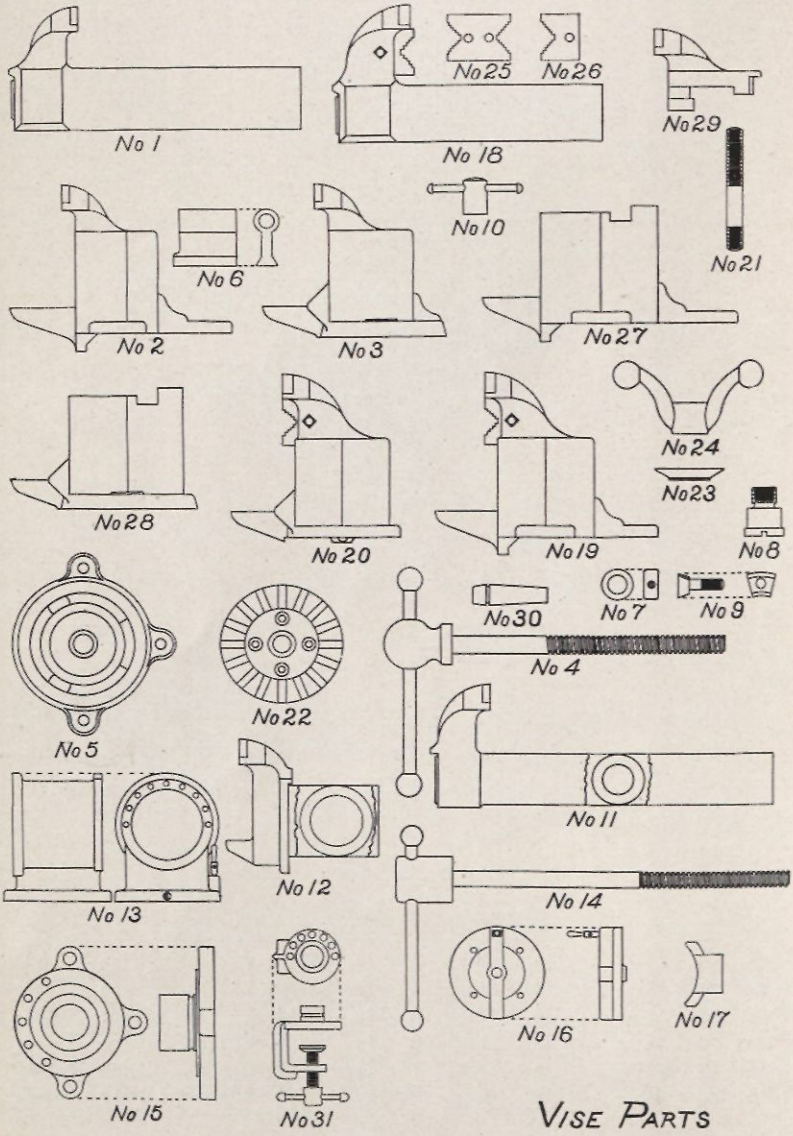
Jaws—Cast St... and Tempered

DISCONTINUED

Swivel Base vises are wel... for all bench work of medium class, especially ordi... g and fitting. The vises are but little lighter than ... " and are equally as well finished.

PRICE LIST—Swivel

No.	295	Jaws 3	in.	Opens 3½	in.	Wg...		Price	**$ 6.50**
No.	30	Jaws 3½	in.	Opens 4	in.	Wgt.		Price	**7.50**
No.	31	Jaws 4	in.	Opens 5½	in.	Wgt.	...os.	Price	**8.75**
No.	32	Jaws 4½	in.	Opens 6	in.	Wgt. 52	lbs.	Price	**10.50**
No.	33	Jaws 5	in.	Opens 7	in.	Wgt. 64	lbs.	Price	**12.50**
No.	34	Jaws 5½	in.	Opens 8	in.	Wgt. 85	lbs.	Price	**16.00**


No 1
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No 15
No 31

VISE PARTS

PRICE LIST—EXTRA PARTS (Vises Only)

Vise No.	Sliding Jaw Part No. 11	Body Part No. 12	Saddle Part No. 13	Screw & Lever Part No. 14	Base Part No. 15	Nut Part No. 16	Friction Block Part No. 17	Collar & Screw Part No. 7
2	$2.00	$2.00	$2.00	$1.00	$1.00	$ .60	$ .60	$ .20
3	3.00	3.00	2.75	1.25	2 25	1.00	.75	.20
4	3.75	3.75	3.25	1.50	3.00	1.25	1.00	.20
5	4.00	4.00	3.75	1.75	3.60	1.40	1.10	.25
6	6.00	6.00	4.00	2.25	3.75	1.50	1.25	.25
7	8.00	8.00	5.25	3.50	4.00	1.75	1.40	.30
8	4.50	4.50	3.75	1.75	3.60	1.40	1.10	.20

Vise No.	Sliding Jaw Part No. 1	Solid Base Body Part No. 2	Swivel Base Body Part No. 3	Screw & Lever Part No. 4	Nut Part No. 6	Base Bolt Part No. 8	Swivel Base Part No. 5	Collar & Screw Part No. 7	Taper Head Bolt Part No. 9	Side Clamp Nut Part No. 10
825	$ 2 60	$ 2.60	$.....	$1.00	$ .30	$.....	$.....	$ .25	$.....	$.....
8½	3.00	3.00	.....	1 25	.40	.....	.....	.30	.....	.....
9	3.50	3.50	.....	1.50	.50	.....	.....	.35	.....	.....
10	4.25	4.25	.....	2.00	.60	.....	.....	.40	.....	.....
11	5.00	5.00	.....	2 50	.80	....	.....	.50	.....	.....
12	6.50	6.50	.....	3.00	1.00	.....	.....	.60	.....	.....
12½	9.00	9.00	.....	4.00	1.25	.....	.....	.70	.....	.....
13	12.50	12.50	.....	5.00	1.50	.....	.....	.80	.....	.....
13½	18.50	18.50	.....	6.50	2.00	.....	.....	.90	.....	.....
14	4.25	4.25	.....	2.00	.60	.....	.....	.40	.....	.....
245	3.00	3.00	.....	1.25	.40	.....	.....	.30	.....	.....
25	3.50	3.50	.....	1.50	.50	.....	.....	.35	.....	.....
26	4.25	4.25	.....	2.00	.60	.....	.....	.40	.....	.....
27	5.00	5.00	.....	2.50	.80	.....	.....	.50	.....	.....
28	6.50	6.50	.....	3.00	1.00	.....	.....	.60	.....	.....
29	9.00	9.00	.....	4 00	1.25	.....	.....	.70	.....	.....
18	4.25	.....	4.25	2.00	.60	.70	2.00	.40	.70	.60
1825	2.60	.....	2.60	1.00	.30	.40	1.20	.25	.40	.30
18½	3.00	.....	3.00	1.25	.40	.50	1.50	.30	.50	.40
19	3.50	.....	3.50	1.50	.50	.60	1.75	.35	.60	.50
20	4.25	.....	4.25	2.00	.60	.70	2.00	.40	.70	.60
21	5 00	.....	5 00	2.50	.80	.80	2.25	.50	.80	.70
22	6.50	.....	6.50	3.00	1.00	.90	3.00	.60	.90	.80
22½	9.00	.....	9.00	4.00	1.25	1.00	4.00	.70	1.00	.90
23	12.50	.....	12.50	5.00	1.50	1.20	5.00	.80	1.20	1.00
23½	18.50	.....	18.50	6.50	2.00	1.50	6.00	.90	1.50	1.25
295	3.00	.....	3.00	1.25	.40	.50	1.50	.30	.50	.40
30	3.50	.....	3.50	1.50	.50	.60	1.75	.35	.60	.50
31	4.25	.....	4.25	2.00	.60	.70	2.00	.40	.70	.60
32	5.00	.....	5 00	2.50	.80	.80	2.25	.50	.80	.70
33	6.50	.....	6.50	3.00	1.00	.90	3.00	.60	.90	.80
34	9.00	.....	9.00	4 00	1.25	1.00	4.00	.70	1.00	.90
60	4.25	4.25	.....	2.00	.60	.....	.....	.40	.....	.....
70	4.25	.....	4.25	2.00	.60	.70	2.00	.40	.70	.60

PRICE LIST—EXTRA PARTS—(Continued)

Vise No.	Sliding Jaw Part No. 1	Solid Base Body Part No. 27	Swivel Back Jaw Part No. 29	Screw & Lever Part No. 4	Nut Part No. 6	Base Bolt Part No. 8	Swivel Base Part No. 5	Collar & Screw Part No. 7	Taper Head Bolt Part No. 9	Side Clamp Part No. 10	Taper Pin Part No. 30
		Swivel Base Body Part No. 28									
43	$3.00	$3.50	$2.50	$1.20	$ .35	$.....	$.....	$ .30	$.....	$.....	$ .40
44	3.50	4 00	3.00	1.50	.40	.....	.....	.35	.....	.....	.45
45	4.00	4.50	3.50	1.75	.50	.....	.....	.40	.....	.....	.50
46	5 00	6.00	5.00	2.00	.60	.....	.....	.50	.....	.....	.60
47	6.50	7.50	6.50	3.00	.70	.....	.....	.60	.....	.....	.70
48	9.00	10.00	8.00	4.00	.80	.....	.....	.70	.....	.....	.80
53	3.00	3.50	2.50	1.20	.35	.45	1.30	.30	.45	.35	.40
54	3.50	4.00	3.00	1.50	.40	.50	1.50	.35	.50	.40	.45
55	4.00	4.50	3.50	1.75	.50	.55	1.80	.40	.55	.50	.50
56	5.00	6.00	5.00	2.00	.60	.60	2.25	.50	.60	.60	.60
57	6.50	7.50	6.50	3.00	.70	.75	3.00	.60	.75	.70	.70
58	9.00	10.00	8.00	4.00	.80	.90	3.80	.70	.90	.80	.80

Vise No.	Sliding Bar Part No. 18	Stat Body Part No. 19	Nut Part No. 6	Stud Bolt Part No. 21	Base Plate Part No. 22	Base Nut Part No. 24	Washer Part No. 23	Screw & Lever Part No. 4	Collar & Screw Part No. 7	Front Pipe Jaw Ea. Part No. 25	Back Pipe Jaw Per Pair Part No. 26
		Swivel Base Body Part No. 20									
C15	$6.00	$6.00	$1.00	$.....	$.....	$.....	$.....	$2.00	$ .60	$1.00	$1.00
C16	9.00	9.00	1.20	.....	.....	.....	.....	2.50	.70	1.50	1.50
C17	12.00	12.00	1.50	.....	.....	.....	.....	3.00	.80	2.00	2.00
C18	16.00	16.00	1.80	.....	.....	.....	.....	4.00	.90	2.50	2.50
150	6.00	6.00	1.00	.80	2.00	.90	.40	2.00	.60	1.00	1.00
160	9.00	9.00	1.20	1.00	3.00	1.00	.50	2.50	.70	1.50	1.50
170	12.00	12.00	1.50	1.25	4.00	1.20	.60	3.00	.80	2.00	2.00
180	16.00	16.00	1.80	1.50	5.00	1.50	.80	4.00	.90	2.50	2.50

NOTE—When ordering repair parts give both vise number and part number.

Centrifugal Pumps

CENTRIFUGAL PUMPS have superior merit for general pumping in any location where the pump can be placed close to the water supply. For Irrigation, Sewage, Reclamation, Water Supply, Wrecking, Excavating, Cassions, Dry Docks, Pulp and Paper Mills, Mine Station, and Sinking Pumps, Surface Condensers, Fire and Underwriters' Pumps and Chemical Plants these Pumps will give satisfactory service.

We maintain that in any location adapted for the installation of a plain centrifugal where all costs for a period of years are included, a well designed pump of this type will prove more economical than any other pump made at the present time.

We claim for our pump, strength, simplicity, free running bearings, easy access to stuffing box, split glands, which are easily rebabbited when worn, ring oiling bearings, best of material throughout and economy of power.

When bolting pump to foundation be careful not to spring the frame. If you do the pump will run hard and the bearings will heat.

Be sure the suction pipe is absolutely air tight.

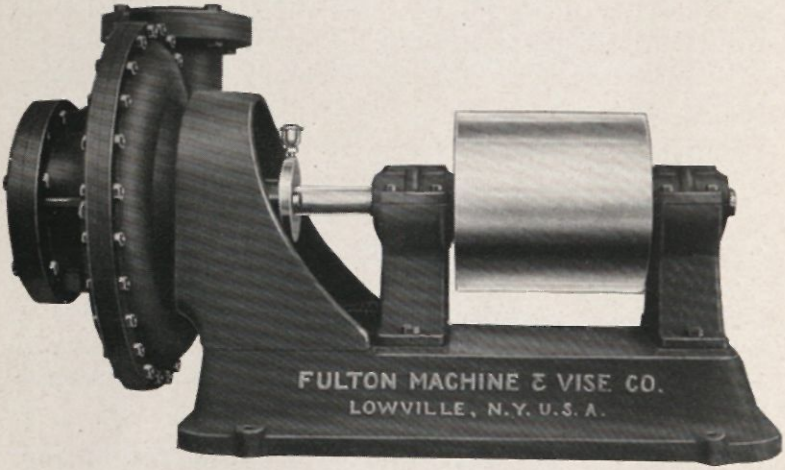
Be sure to run the pump in the right direction.

Use only long sweep elbows and use as few as possible.

Set pump as near the water as possible.

If water is to be forced through long pipes or many elbows are used, speed should be increased to correspond. **Larger** size pipe and fittings will save power.

For elevations in excess of 60 feet pumps will be furnished extra heavy at slight additional cost.



Left-Hand Pattern

Swing Case Pump

We make these Pumps Right or Left

For Sizes and Prices See Next Page

This type of pump can be placed so that the outlet will discharge at any point of the circle. This advantage will oftentimes save an elbow and consequent friction which saves power.

Fitted with ring oiling bearings, split glands and generous size shafts.

Table of speeds, Page 32.

Swing Case Pump

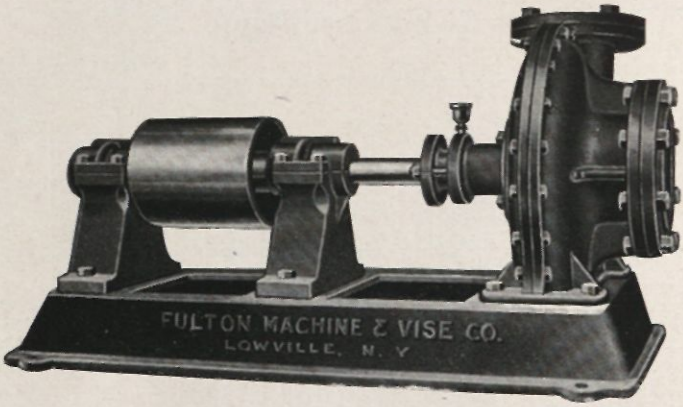
PRICE LIST

No.	Suction	Dis.	Capacity	H. P. for each ft. lift	Pulley		Weight Lbs.	Code Word	Price (Iron)
					Dia.	Face			
1½	2	1½	75 to 100	.03	5	5	135	*Yak*	$ 45.00
2	2½	2	145 to 165	.05	6	6	195	*Yaw*	85.00
2½	3	2½	180 to 250	.085	6	6	300	*Yawl*	95.00
3	4	3	250 to 350	.126	8	8	400	*Yeast*	110.00
4	5	4	475 to 600	.2	8	8	425	*Yelp*	135.00
5	6	5	755 to 900	.26	10	10	800	*Yew*	185.00
6	8	6	1,200 to 1,800	.53	12	12	925	*Yoke*	240.00
8	10	8	2,000 to 3,000	1.40	14	14	1,000	*Yon*	375.00
10	12	10	3,000 to 4,000	1.90	18	16	1,800	*Youth*	500.00
12	14	12	4,000 to 5,000	2.30	18	16	2,200	*Yule*	600.00

Floor space required practically same as Standard Horizontal Pump.

We can furnish this type of pump in brass if required. Prices on application.

Please Note:—Brass Pumps have cases, runner, shaft, glands, stuffing-box and flanges brass. Stands, pulley and base are iron.



Right Hand

Standard Horizontal Pump

We make these Pumps Right or Left

For Sizes and Prices See Next Page

This is the type of pump most extensively used for all purposes. All our pumps are fitted with ring oiling bearings except the number one.

We carry a large stock at all times and are prepared to make prompt shipments.

We always ship right-hand pumps unless otherwise specified.

Table of speeds on Page 32.

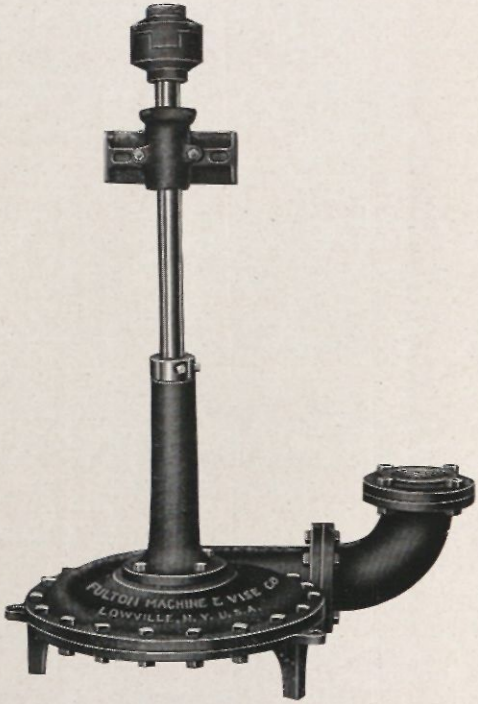
Brass Pumps:—See Note bottom Page 23.

Standard Horizontal Pumps

PRICE LIST

No.	Diameter Discharge Opening	Suction Flange	Economical Capacity in Gallons per Minute	H. P. for each foot lift	Pulley		Weight Lbs.	Floor Space Required Over All	Code Word (Iron)	Code Word (Brass)	Price (Iron)	Price (Brass)	Primer Extra	Foot Valve Extra	Brass Foot Valves
					Dia.	Face									
1	1	1¼	35	.015	3	3	50	12 x 14	*Ware*	*Orb*	$30.00	$55.00	$.....	$.....	$.....
1½	1½	2	75	.03	5	5	120	15 x 23	*Wad*	*One*	35.00	65.00	15.00	5.00	8.00
1¾	2	2	90	.04	5	5	120	15 x 23	*Wife*	*Oft*	50.00	80.00	15.00	6.00	8.50
2	2	2½	140	.05	6	6	170	17 x 27	*Walk*	*Once*	70.00	125.00	20.00	7.00	9.00
2½	2½	3	180	.085	6	6	190	18 x 28	*Wall*	*Ore*	80.00	150.00	20.00	8.00	12.00
3	3	4	260	.126	8	8	400	23 x 36	*Wand*	*Ox*	110.00	175.00	25.00	9.00	15.00
4	4	5	475	.2	8	8	435	24 x 42	*War*	*Oat*	130.00	275.00	30.00	12.00	21.00
5	5	6	755	.26	10	10	650	29 x 48	*Ward*	*Old*	165.00	350.00	40.00	15.00	26.00
6	6	8	1,200	.53	12	12	725	30 x 50	*Wasp*	*Oak*	200.00	410.00	45.00	20.00	30.00
8	8	10	2,000	1.40	14	14	1,200	37 x 56	*Wax*	.....	310.00	.....	65.00	30.00	40.00
10	10	12	3,000	1.90	18	16	1,600	38 x 58	*Web*	.....	395.00	.....	75.00	40.00	50.00
12	12	14	4,200	2.30	18	16	2,100	48 x 60	*West*	.....	500.00	.....	.....	50.00	65.00
15	15	18	8,000	4.40	20	18	4,500	56 x 70	*Well*	.....	700.00	.....	.....	75.00	110.00

We furnish these pumps with outlet same size as suction if desired, but do not carry same in stock.



Standard Vertical Pumps

Made Right or Left

Iron or Brass

For Sizes and Prices See Next Page

This pump should stand on bottom of well or cistern and it should be submerged. We furnish one box and coupling.

Table of speeds, see Page 32.

Standard Vertical Pump

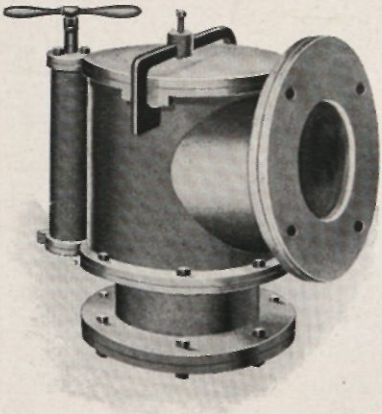
PRICE LIST

No.	Suction	Dis.	Economical Capacity	Horse Power Required to lift 1 foot	Weight Lbs.	Price (Iron)	Price (Brass)	Code Word (Iron)	Code Word (Brass)
1½	2	1½	75	.03	85	$ 30.00	$ 55 00	*Ax*	*Gig*
1¾	2	2	85	.04	110	45.00	70.00	*And*	*Gat*
2	2½	2	145	.05	120	60.00	110.00	*Ann*	*Get*
2½	3	2½	180	.09	150	70.00	135.00	*Ace*	*Gem*
3	4	3	250	.126	260	75.00	150.00	*Alice*	*Gad*
4	5	4	475	.22	370	110.00	240.00	*All*	*Gaw*
5	6	5	755	.36	400	140.00	315.00	*Abe*	*Girl*
6	8	6	1,200	.55	480	170.00	360.00	*Ape*	*Gang*
8	10	8	2,000	1.40	800	260.00	.....	*Asa*	.....
10	12	10	3,000	1.90	1,200	330.00	.....	*Air*	.....
12	14	12	4,000	2.45	1,600	420.00	.....	*Axel*	.....
15	18	15	8,000	4.35	3,500	600.00	.....	*Arbor*	.....

Foot Valve and Strainer

No.	Iron Price	Brass Price
1½	$ 5.00	$ 8.00
1¾	6.00	8.50
2	7.00	9.00
2½	8.00	12.00
3	9.00	15.00
4	12.00	21.00
5	15.00	26.00
6	20.00	30.00
8	30.00	40.00
10	40.00	50.00
12	50.00	65.00
15	75.00	110.00
18	110.00	140.00

Improved Hand Primer

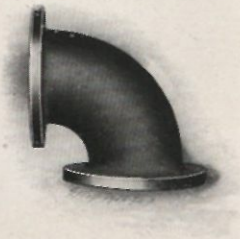


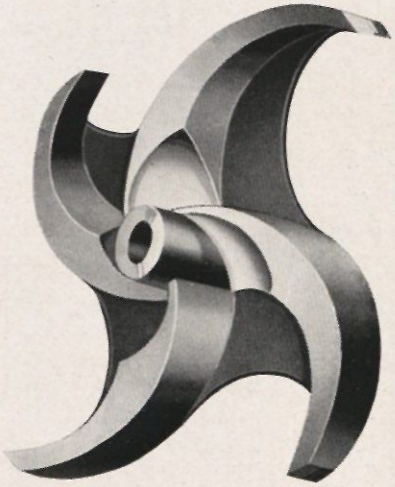
PRICE LIST

2	inch	$15.00
2½	inch	20.00
3	inch	20.00
4	inch	25.00
5	inch	30.00
6	inch	40.00
8	inch	45.00
10	inch	65.00
12	inch	75.00

Flanged Long Radius Elbows

Size	Price	Size	Price
1½	$5.00	5	$11.75
2	5.75	6	14.00
2½	6.25	8	23.75
3	7.00	10	36.00
4	9.25	12	50.00
		15	80.00





Impeller

Our impeller has web at back and will pump thick fluids as well as water.

Standard Companion Flanges

PRICE LIST

1 inch	$1.25	5 inch	$ 3.65
1¼ inch	1.35	6 inch	4.00
1½ inch	1.40	8 inch	6.50
2 inch	1.50	10 inch	9.25
2½ inch	2.00	12 inch	12.50
3 inch	2.25	15 inch	21.00
4 inch	3.00	18 inch	31.00

Pump Extras

PRICE LIST

	No. 1 List	No. 1½ List	No. 1¾ List	No. 2 List	No. 2½ List	No. 3 List	No. 4 List	No. 5 List	No. 6 List	No. 8 List	No. 10 List
Swing Case Base	$10.00	$15.00	$15.00	$20.00	$22.00	$25.00	$28.00	$36.00	$40.00	$60.00	$80.00
Standard Base	10.00	12.00	15.00	20.00	22.00	28.00	30.00	38.00	42.00	54.00	75.00
Stand	3.00	5.00	6.00	9.00	10.00	11.00	11.50	12 00	12.00	14.00	18.00
Pulley	1.75	2.50	2.50	4.00	4.00	5.25	5.25	7.00	9.50	12.50	19.50
Bearing Cap	....	1.50	2.50	2.50	3.00	4.00	4.50	5.00	6.00	7.00	8.00
Gland	2 00	4.00	4.50	4.75	5.00	5.50	6.00	8.00	10.00	11.00	12.00
Plain Case	6.00	8.00	10.00	11.00	12.00	15.00	20.00	30.00	45.00	60.00	80.00
Suction Case	6.00	9.00	11.00	12.00	14.00	18.00	25.00	38.00	55.00	70.00	100.00
Discharge Flange	1.25	1.40	1.50	1.50	2.00	2.25	3.00	3.65	4 00	6.50	9.25
Suction Flange	.....	.....	1.50	2.00	2.25	3.00	3.65	4.00	6.50	9.25	12.50
Shaft	3.00	4.00	4.50	5.00	6.00	7.00	8.00	9.00	10 00	12.00	15.00
Runner	2.00	3.00	3.50	4.00	5.00	6.00	8.00	10.00	12.00	16.00	20.00
Vert. Sleeve	4.00	6.00	6.00	8.00	8.00	10.00	12.00	14.00	14.00	18.00	18.00
Clutch Coupling	4.50	6.00	6.50	7.00	8.00	10.00	12.00	15.00	19.00	25.00	.....
Vert. Bearing	2.00	2.50	2.75	4.00	4.50	5.00	5.50	6.00	6.00	7.00	.....
Collar	.60	.65	.65	.80	.80	1.00	1.20	1.40	1.40	1.60	1.80
Stuff Box	.....	3.00	3.50	4.00	5.00	6.00	7.00	8.00	9.00	10.00	12.00
Hood	6.00	10.00	10.00	12.00	15.00	18.00	20.00	25.00	28.00	32.00	38.00

Friction and Power

TO find theoretical horse-power required to elevate water, multiply the gallons pumped per minute by the head in feet, and by 8.33 (weight of one gallon of water), and divide the product by 33,000. To this must be added a certain amount according to efficiency of pump; it is usual to double the theoretical power, which would be correct for 50 per cent. efficiency.

By "head" is meant the actual elevation in feet from surface of suction water to point of discharge, plus the friction head in suction and discharge pipes and elbows.

The following examples will show the importance of using large pipes in order to save power: A 6-inch pump delivers 1,200 gallons per minute elevating 20 feet; combined length of suction and discharge pipe is 100 feet and of 6-inch pipe. Referring to table, it will be found that a velocity of 12 feet per second in 6-inch pipe is equal to 1,200 gallons, or practically 1,200 feet per second in 6-inch pipe is equal to 1,200 gallons, or practically 1,200. The corresponding friction head is for the 100 foot lengths of pipe 8.8 feet; therefore, the total head is 20 feet plus 8.8 feet, or 28.8 feet. Figuring power as above and allowing 50 per cent. efficiency, it will be found that power required to drive pump is 15.26 horse-power, and speed required is about 410 revolutions per minute.

If, instead of 6-inch pipe, 8-inch had been used, with same size pump, a velocity of less than 7 feet per second would be obtained in the pipe and corresponding friction head less than 2.38 feet, and therefore total head 22.38 feet instead of 28.8 feet. The power required is 11.86 horse-power as against 15.26, and speed of pump 360 revolutions per minute as against 410 as above, a saving in power of over 22 per cent.

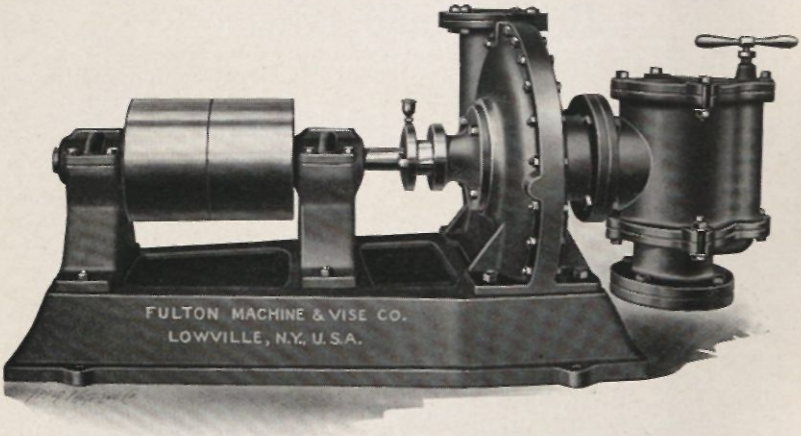
It is well to bear in mind that if above results as regards power and capacity are to be obtained the pump must be run at right speed; by running at higher speeds a larger quantity of water will be obtained, but at a sacrifice of power, due to reduced pump efficiency. It is therefore important, if economical work is wanted, that pumps should not be expected to deliver larger quantities of water than those given as the right capacity in the various tables of this catalogue.

When pumps are placed above water level it is necessary to prime them in starting. We recommend a flap valve on the discharge pipe or a foot valve on the end of the suction pipe.

We do not recommend that our customers attempt to draw water by suction over 25 feet. It costs more to draw water by suction than it does to force water above the pump.

To convert water pounds pressure into water feet elevation multiply by 2.31.

To convert water feet into pounds pressure multiply by .434.



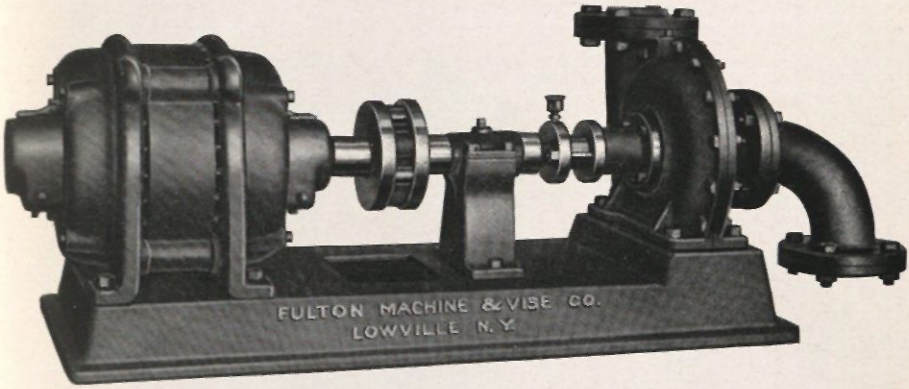
Standard Horizontal Pumps

Fitted with Tight and Loose Pulleys and Primer

Pumps furnished tight and loose pulleys at a slight advance in price. Primers extra, see list.

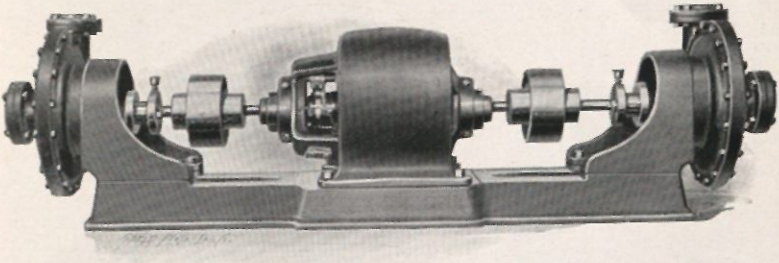
Table of Speeds at which Standard Horizontal, Swing Case, Vertical and Motor Driven Pumps should run to raise water to different heights.

No.	10 ft.	12 ft.	16 ft.	20 ft.	25 ft.	35 ft.	40 ft.	50 ft.	60 ft.	70 ft.
1	1,200	1,250	1,350	1,500	1,700	1,900	2,000	2,200	2,400	2,600
1¼	700	750	850	950	1,000	1,150	1,200	1,300	1,400	1,500
1¾	675	720	820	895	970	1,115	1,165	1,270	1,380	1,480
2	525	570	645	715	875	903	955	1,053	1,143	1,220
2½	470	520	595	670	715	870	935	1,005	1,095	1,155
3	420	445	495	545	645	845	910	985	1,065	1,135
4	345	395	445	495	595	795	885	915	989	1,015
5	325	375	425	459	545	745	855	895	955	1,000
6	235	295	355	415	485	575	605	645	695	740
8	220	245	305	355	385	445	470	495	540	580
10	215	240	280	315	355	410	430	460	510	540
12	200	225	260	290	320	375	390	425	475	500
15	170	190	225	250	290	340	350	380	425	460



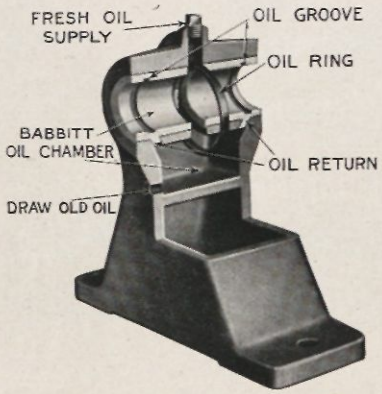
Standard Pump

Connected to A. C. motor. Made up on order and connected to any kind or size motor.

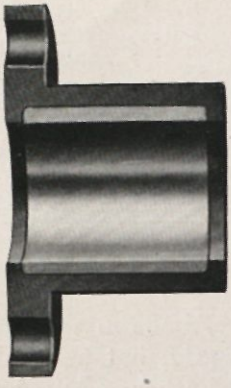


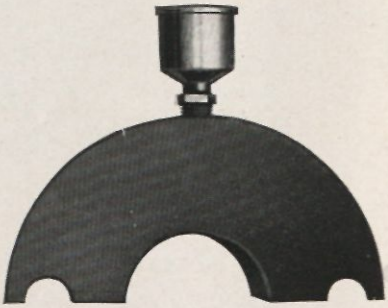
This pump, either motor or belt drive, made in any size. Used for pumping separate kinds of liquid, hot and cold water, or can be piped from one end to the other and used as a stage pump.

Prices for above outfits named on application.

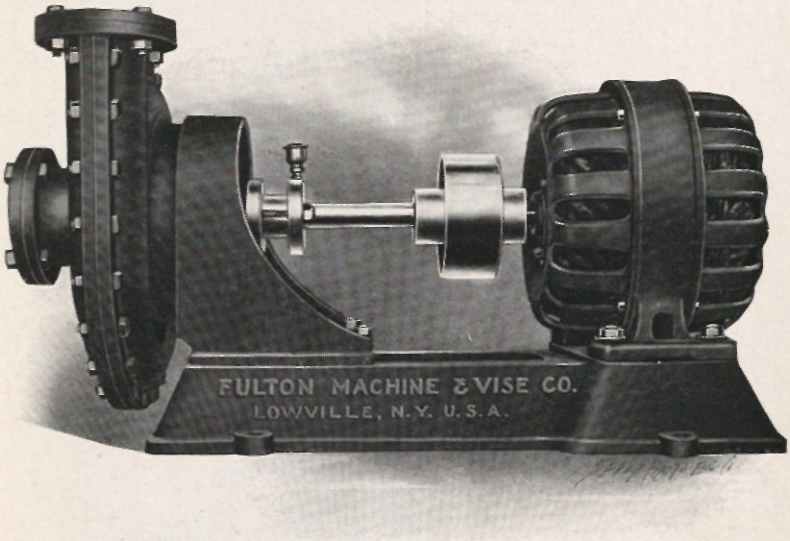


Sectional View of our Ring Oiling Bearing





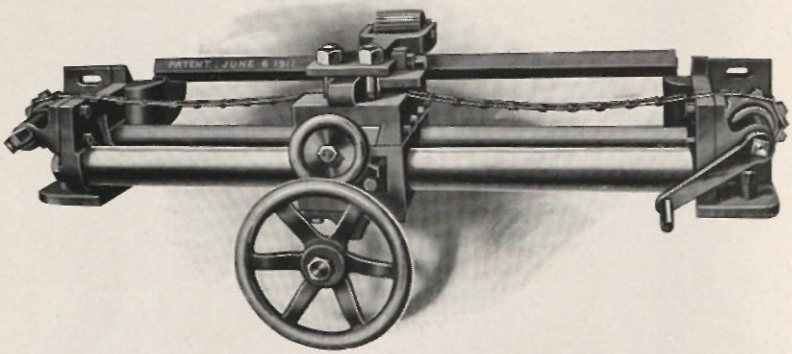
Split Gland used in our pumps. Can be easily removed and rebabbitted.



Swing Case, Motor Driven Pump

Prices Quoted on Application

For gas or steam engine, or for motor connection. We will furnish pumps with or without engine or motor and shall be pleased to name prices on any special pumping outfit upon request.



Potter Pulp Stone Truing Lathe

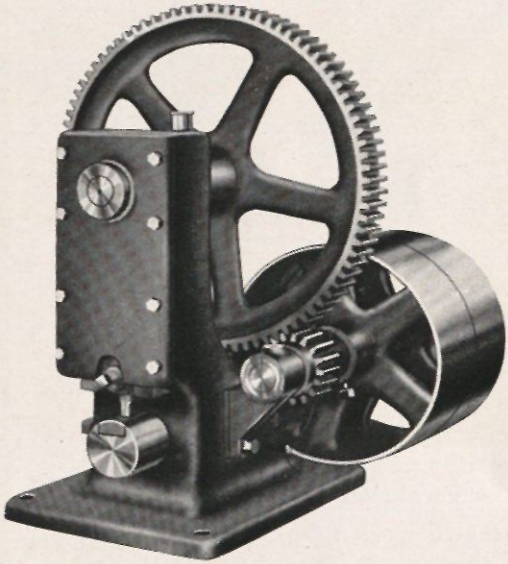
Patented

This lathe is very rigid and keeps the stone sharp and true, thereby saving silver waste and time, and the life of the stone is increased. It increases production by a large per cent. and feeds automatically.

We shall be pleased to furnish any information on this tool or refer to satisfied users.

Bearings bronzed bushed.

Prices on application.

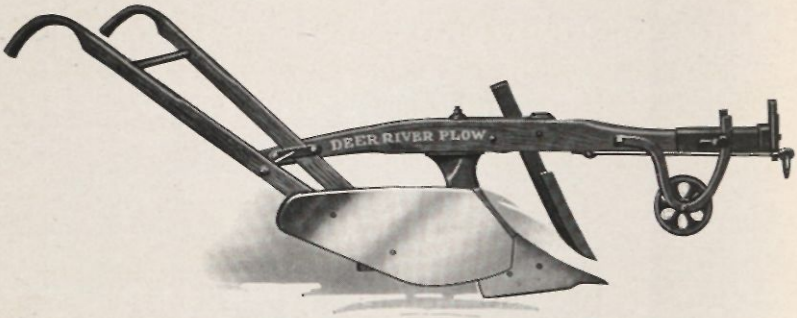


Core Punch

This machine is used for punching slots either 5/8 inch or 3/4 inch wide in the end of pipe used by paper mill manufacturers for cores on which to wind paper.

Tight and loose pulleys, 12 inch diameter, 4 inch face.

Price, **$100.00.**



Deer River Plow

This plow has been manufactured for over thirty years. It has stood the test and has made for itself a reputation of being the best walking plow ever made.

Other plows have been brought out and exploited but any farmer that has ever used the Deer River Plow cannot be induced to accept other makes.

Heavy red birch beams, with natural wood finish, no paint to cover defective timber, heavy cast steel moldboards, with soft center, tempered and polished, oak handles, cast steel coulter and the BEST materials throughout.

PRICE LIST

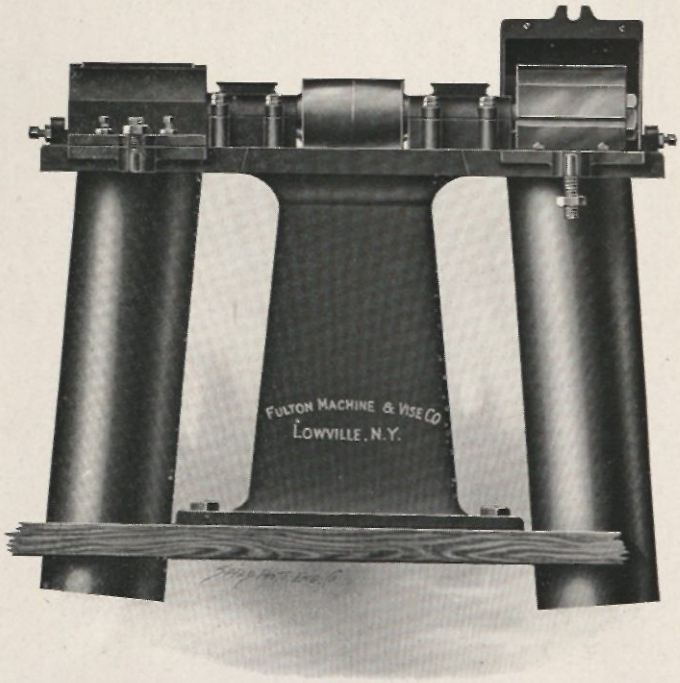
No. 1	Deer River Plow, 2 horse, cast steel M. B., cast L. S.....	$13.50
No. 1	Deer River Plow, 2 horse, cast steel M. B., steel L. S.....	14.00
No. 2	Deer River Plow, 1 horse, cast steel M. B., cast L. S.....	13.00
No. 2	Deer River Plow, 1 horse, cast steel M. B., steel L. S.....	13.50

Extras on next page.

Extras "Deer River" Plow

PRICE LIST

Standard	$2.75
Mould Board (Steel Nos. 1 and 2)	4.00
Cast Landslide	1.00
Steel Landslide	1.00
Landslide Shoe	.50
Coulter (Cast Steel)	1.00
Coulter Clasp	.35
Draft Rod and Ring	.75
Draft Rod Staple	.25
Clevis Hook with Bolt	.25
Patent Clevis	.18
Beam Cap	.15
Cog End	.15
Wheel	.35
Wheel and Wrought Arms	1.00
Handle Rods	.15
Handle Rounds	.15
Wheel Arm Clasps	.35
Beam	2.50
Beam Handle	.60
M. B. Handle	.75
Grape Vine Rod	.50
Joint Bolt	.10
Plow Bolts	.05
Wrench	.15
King Bolt	.25
Spreading Rod	.25
Common Points, Nos. 1 and 2	.50
Wide Points, No. 1 only	.60
Coulter Points, No. 1 only	.75
Handle Plates	.15
Clevis Iron and Wrench	.75
Jointer	1.50



Slab and Edging Barker

This machine saves its costs many times at any place where spruce lumber is manufactured. Many mills are today burning or selling their slabs and edgings, and it is this part of the tree that makes the best pulp. It has a far better fibre for sulphite than the heart. Bark your edgings and slabs on our BARKER and sell them to the Sulphite Companies. These machines have two heads, each requiring an operator. The capacity of the machines is four cords per day, and the machines represent a very small outlay for the work accomplished. We can refer you to many mills that are using our Barkers. Write for further descriptions.

Price, **$125.00.** Weight, 800 lbs.

WE have a first-class foundry, pattern and machine shop. We will contract to furnish any special machines or castings, either iron or brass. Inquiries solicited and estimates cheerfully furnished

UNITED LITHO. & PTG. CO., ROCHESTER, N. Y.